

CLAIMS

What is claimed is:

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1. A system, comprising:

a first substrate having both transparent and alternating opaque and
transparent regions with respect to incident electromagnetic radiation;

a radiation diffuser at least partially transparent to said incident
electromagnetic radiation;

a coupler for attaching said radiation diffuser to said first substrate to
form a diffuser-substrate interface;

a polymer used for affixing said first substrate to a second substrate,
said polymer positioned between said first substrate and said second substrate
along at least a peripheral region common to both said first and said second
substrates; and

a source of electromagnetic radiation incident onto said diffuser
attached to said substrate for polymerizing said polymer.

2. A system as in claim 1, wherein said radiation diffuser includes a pressure-
sensitive adhesive intermediate to said diffuser-substrate interface.

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3. A system as in claim 2, wherein a side of said radiation diffuser with said adhesive is attached to said first substrate over said alternating opaque and transparent regions.
4. A system as in claim 1, wherein said incident radiation is directed onto said diffuser attached to said first substrate to cause polymerization of said polymer.
5. A system as in claim 4, wherein said radiation diffuser and said adhesive are removed from said first substrate after said radiation incident on said diffuser has polymerized said polymer between said first and second substrates.
6. A system as in claim 1, wherein said diffuser comprises a tape, said tape having a matte finish to cause diffusion of said incident radiation.
7. A system as in claim 1, wherein said diffuser comprises a hologram imprinted on a polymer sheet, said hologram being designed to diffuse said incident radiation.
8. A system as in claim 7, wherein said hologram includes an adhesive on one side of said polymer sheet for attachment to said first substrate.

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9. The system of claim 1, wherein said diffuser comprises a grating tape.

10. A system, comprising:

a first substrate having both transparent and alternating opaque and transparent regions with respect to incident electromagnetic radiation;

5 a polymer used for affixing said first substrate to a second substrate, said polymer positioned between said first substrate and said second substrate along at least a peripheral region common to both said first and said second substrates;

10 a sheet being at least partially transparent to electromagnetic radiation having periodic linear prismatic structures on one side of said sheet, said prismatic structures being designed to permit radiation incident from a non-pyramidal side of said sheet to bend light at a predetermined large angle with respect to the normal to said first substrate; and

15 a source of electromagnetic radiation directed onto said substrate for polymerizing said polymer.

11. A system comprising:

a robotic arm positioned above the first and second substrates of claim 1, said arm being movable along a periphery of said substrates;

20 an optical fiber, a first end of said fiber being held by said robotic arm over said first and second substrates;

a mirror mounted on said robotic arm for directing radiation from said optical fiber mounted on said robotic arm onto said first substrate at an angle between approximately 40 and approximately 90 degrees with respect to the normal to said substrate; and

5 a source of electromagnetic radiation directed into a second end of said optical fiber.

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12. A system, comprising:

a first substrate having a region including alternating transparent regions and opaque regions with respect to incident electromagnetic radiation;

10 a radiation diffuser at least partially transparent to said incident electromagnetic radiation; and

a coupler for attaching said radiation diffusing element to said first substrate containing said alternating opaque and transparent regions to form a diffuser-substrate interface; and

15 a second substrate for being coupled to said first substrate.

13. The system of claim 12, further comprising:

a polymer used for affixing said first substrate to said second substrate, said polymer being positioned between said first and second substrate along at least a peripheral region common to both said first and said second substrates.

20 14. The system of claim 13, further comprising:

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a3 → a source of electromagnetic radiation incident onto said diffuser
attached to said first substrate for polymerizing said polymer.

15. A display, comprising:

- 5 a first substrate having transparent regions and opaque regions with respect to incident electromagnetic radiation;
- a radiation diffuser at least partially transparent to said incident electromagnetic radiation; and
- a coupler for attaching said radiation diffusing element to said first substrate containing said alternating opaque and transparent regions to form a diffuser-substrate interface; and
- 10 a second substrate for being coupled to said first substrate.

16. A method of sealing first and second substrates comprising:

- curing a glue sealing strip provided on a surface of at least one of the first and second substrates with electromagnetic radiation, said surface
- 15 including transparent and opaque areas; and
- redirecting light to cure glue areas under the opaque areas.

17. A method of curing a liquid crystal display (LCD) glue sealing strip with electromagnetic radiation in a region of conducting leads, comprising:

- 20 redirecting vertical light substantially horizontally to cure glue areas under the conducting leads.

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18. A method, comprising:
- providing a first substrate having both a transparent region and alternating transparent and opaque regions with respect to incident electromagnetic radiation;
 - 5 attaching a radiation diffuser, at least partially transparent to said incident electromagnetic radiation, to said first substrate to form a diffuser-substrate interface;
 - affixing said first substrate to a second substrate with a polymer;
 - curing said polymer with electromagnetic radiation incident onto said
 - 10 diffuser attached to said substrate for polymerizing said polymer such that light is redirected to cure the polymer under the opaque areas.
19. The method of claim 18, wherein said radiation diffuser includes a pressure-sensitive adhesive intermediate to said diffuser-substrate interface.
20. The method of claim 19, wherein a side of said radiation diffuser with said adhesive is attached to said first substrate over said alternating opaque
- 15 and transparent regions.
21. The method of claim 18, wherein said incident radiation is directed onto said diffuser attached to said first substrate to cause polymerization of said polymer.

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22. The method of claim 21, wherein said radiation diffuser and said adhesive are removed from said first substrate after said radiation incident on said diffuser has polymerized said polymer between said first and second substrates.

5 23. The method of claim 18, wherein said diffuser comprises a tape, said tape having a matte finish to cause diffusion of said incident radiation.

24. The method of claim 18, wherein said diffuser comprises a hologram imprinted on a polymer sheet, said hologram being designed to diffuse said incident radiation.

10 25. The method of claim 24, wherein said hologram includes an adhesive on one side of said polymer sheet for attachment to said first substrate.

26. The method of claim 18, wherein said diffuser comprises a grating tape.

27. A system, comprising:

15 a first substrate having both transparent and alternating opaque and transparent regions with respect to incident electromagnetic radiation; and

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a radiation diffuser at least partially transparent to said incident electromagnetic radiation, said radiation diffuser being attached to said first substrate to form a diffuser-substrate interface.

28. The system of claim 27, further comprising:

5 a polymer used for affixing said first substrate to a second substrate, said polymer positioned between said first substrate and said second substrate along at least a peripheral region common to both said first and said second substrates; and

10 a source of electromagnetic radiation incident onto said diffuser attached to said substrate for polymerizing said polymer.

29. A method, comprising:

15 providing a first substrate having both a transparent region and alternating transparent and opaque regions with respect to incident electromagnetic radiation;

attaching a radiation diffuser, at least partially transparent to said incident electromagnetic radiation, to said first substrate to form a diffuser-substrate interface;

20 affixing said first substrate to a second substrate; and redirecting light to avoid shadowing under said opaque regions.